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Cover page

Guess again if you think those bales on the cover are filled with cotton. They're cotton linters, the short fibers adhering to cottonseed after ginning. The seeds from which they have been removed are in the cotton mill in the background, their oil being extracted for use in such products as salad and cooking oil, mayonnaise, salad dressing, margarine, and shortening. The linters are the most widely used of all the byproducts of the cottonseed—including the protein-rich cottonseed meal as food for livestock; or the hulls used similarly as animal feed but also as ingredients for fertilizer, synthetic rubber, plastics, and petroleum. Composed principally of cellulose, the linters are used in the production of photographic and X-ray films, plastics, gunpowder, felts, yarns, mattresses, writing paper, etc. Cotton linters are processed under standards developed by USDA's Agricultural Marketing Service.

Editor, MILTON HOFFMAN

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USDA Acceptance Service Helps Market Meat

IF YOU are a large-scale user of meat, in all probability, you are buying your supplies from many different sources. One of your primary concerns is that the meat you buy must suit your particular needs. To make sure that it does, you can use the services of a nationwide network of meat specialists to check your purchases.

Such specialists are provided by the U.S. Department of Agriculture. More specifically, their services are a function of the Livestock Division of USDA's Agricultural Marketing Service, which provides in addition to its voluntary Federal meat grading service, other specialized services for specific needs.

One of these is the Acceptance Service, designed to simplify some of the problems of buying meats and meat products according to uniform specifications. There are two basic sets of specifications you may use under Acceptance Service: USDA's Institutional Meat Purchase Specifications; and the National Association of State Purchasing Officials' specifications. A combined total of 210 individual fresh and processed meat items are covered by the two sets. However, if none of these meets your particular requirements, USDA will help you to establish specifications tailored to your needs. Once your requirements have been determined, USDA graders will examine the meat products and certify them if they meet your standards.

Long and widely used by steamship lines, hotel and restaurant chains, various institutions, and state, county, and city governments, a new and somewhat unusual institution recently decided to make use of the Acceptance Service. In August of 1961, the Chicago Mercantile Exchange initiated futures trading on frozen pork bellies—the cut from which bacon is made.

In futures trading, the commodity doesn't change hands immediately, ex-

cept as contracts on paper. And while the "paper" may change hands many times, the commodity itself is not transferred until some future date specified in the contract. On that date, the seller must deliver a product meeting all the requirements stated in the contract.

The Mercantile Exchange realized that such trading could be possible only if one lot or "contract" of bellies was interchangeable with any other. Only if the contracts were consistently uniform in quality and other characteristics could buyers and sellers have confidence in the goods they were trading.

The Exchange needed a standard to which bellies submitted for futures trading would have to conform rigidly. The standard had to be acceptable to the meat industry.

"We set up grading specifications using the preferences of the trade as a common denominator," says Glenn Anderson, a member of the Chicago Mercantile Exchange Board of Directors.

But arriving at this common denominator was no simple matter. Long before the acceptance work began, the Meat Grading Branch and the Exchange called upon the resources of still another Branch within the Livestock Division—the Standardization Branch.

Since none of the existing specifications exactly met the requirements at hand, representatives of the Exchange, Meat Grading, and Standardization set to work drafting a set of specifications. Once on paper, the specifications were demonstrated to members of industry, and after some revisions, a practical, workable standard was developed—one satisfactory to all concerned, the Exchange, industry, and USDA.

The job of examining and certifying the bellies was then turned over to USDA's meat graders working under the Acceptance Service. With qualified graders in every major meat packing area of the Nation, USDA is well

equipped to service such a program.

President Everette B. Harris of the Chicago Mercantile Exchange points out, "Inspection can make or break a contract. People have to have confidence that the inspection is done by an impartial agent. We asked USDA to do the inspections because of the excellent results we have had with eggs and other commodities. We find more acceptance and less controversy when the Government does the inspecting."

The participation of USDA in maintaining the standard of the Exchange has shown benefits to the entire industry. Some dealers, for example, have found that frozen pork bellies that wouldn't be bought under a brand name alone are purchased when USDA graders certify that they meet Exchange standards.

J. R. Stephenson, of Hess-Stephenson, Chicago meat brokers, observes, "If bellies meet Mercantile Exchange standards, they have to be good."

USDA's Acceptance Service gives buyers confidence in the products they buy, thus expanding and improving the marketing of meat and meat products. A service designed for the commercial meat buyer with requirements of uniformity, the Acceptance Service helps to expand and improve the marketing of meat and meat products by increasing the buyer's confidence in his purchase. He can buy meat anywhere in the Nation without having to inspect the meat himself. He is assured of a product that has been impartially examined and certified as conforming to his required standards.

This service is paid for by the user and is available at the same rate as regular Federal meat grading service, which is \$7.20 per hour.

Further information on how the Acceptance Service can aid you in your purchasing operations is available from the Livestock Division, Agricultural Marketing Service, U.S. Department of Agriculture, Washington 25, D.C.

A New Grading Method for Tomatoes for Processing

By FRANK W. BETZ

THE Agricultural Marketing Service has proposed a new set of U.S. Standards for Grade Evaluation of Tomatoes for Processing. The proposed standards are based on its new, more-accurate grading system, which drew highly favorable comments from both growers and processors in full-scale field trials this season.

The new standards will not replace the present U.S. Standards for Tomatoes for Manufacture of Strained Tomato Products or the U.S. Standards for Canning Tomatoes. These will continue in effect. However, USDA standardization experts feel that when the new standards are worked out in final form they will provide the best basis ever for grower-processor contracts.

AMS's Fruit and Vegetable Division, which has been working on the proposed standards for three years, is allowing a

full year for comments on them, since both the grading system and the standards are new. This will give the industry a full season's experience with the standards on which to base comments and suggestions.

Some growers and processors are already familiar—through the field trials—with the electronic instrument that is the heart of the grading system. The USDA Tomato Colorimeter measures the exact color of the raw juice of the tomatoes—one of the two important factors in determining their value to the processor. The device was developed by AMS marketing researchers to eliminate the inevitable errors of the human eye in judging color.

Defects, the other big grade factor, are rated by the inspector. He classifies the tomatoes A, B, C, or Culls, depending on the amount and types of defects and decay present. From the percentage of tomatoes that fall in each

category, he calculates a "percent usable" for the entire load. Then, instead of combining the color and defects into one overall grade like U.S. No. 1 or No. 2, the ratings are reported separately.

This gives both growers and processors a more accurate measure of the real value of the tomatoes.

A few large processing plants in the East and Midwest have used the system experimentally, alongside the regular inspection, during the past three years. Identical samples from incoming loads were graded simultaneously by both methods. This helped work the hitches out of the system and gave the processors the information they needed to develop sound and satisfactory pricing systems based on the proposed grades.

During the 1962 season, one large plant also used the new system as the basis for its grower contracts. Both the growers and the processor were impressed by the system's accuracy in grading over 11,000 loads. Inspection reports showed a "remarkable" correlation between the grading at all receiving stations for this plant. Even when tomatoes were coming in with better interior color than they showed on the outside—a situation that used to give inspectors trouble—the USDA colorimeter never faltered.

The average raw product grade correlated directly with the actual processed juice color and yield of usable fruit in the plant. In other words, the new grading system was really measuring the processing value of the incoming tomatoes.

In addition, the inspectors reported that grower complaints were practically nonexistent with the new system.

Comments and suggestions on the proposed grade standards for tomatoes for processing are due by November 30, 1963. The Fruit and Vegetable Division will use them in making a final reexamination of the proposed standards and then issue the official standards. On the basis of the new grading system's success so far, that will mark a real step forward for tomato growers and processors.

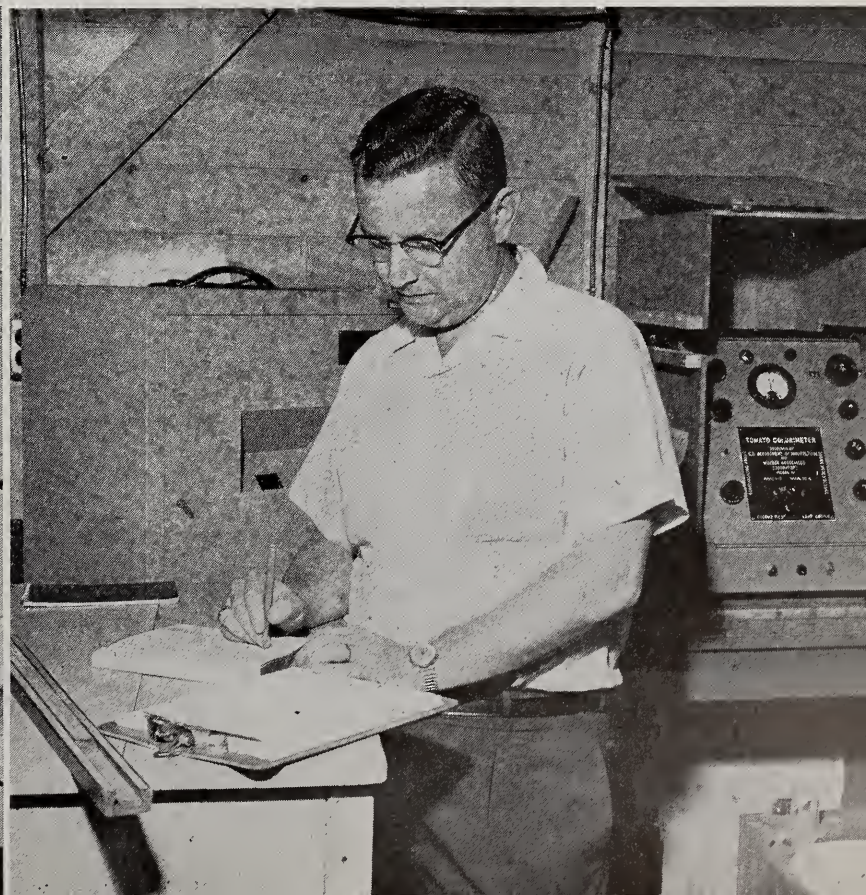
(The author is a staff member of the Fruit and Vegetable Division, Agricultural Marketing Service, USDA.)

Inspector at left has divided a tomato sample into A, B, C, and Cull classifications. Tilting the table sends the tomatoes into weighing bins. From the weights, inspector will calculate the "percent usable" in the load. In the background, another inspector prepares a sample for measuring the color of the tomato juice on a colorimeter.





The electronic colorimeter (above) is the heart of the new grading system. Tomatoes are juiced (lowered left) and the color of the juice is then measured on the machine. Inspector (lower right) records results on official inspection form.



IMPROVING SALES OF PICKLES

by HUGH M. SMITH and MICHAEL G. VAN DRESS

PRODUCING a quality product at the farm is not enough these days. And that includes just about everything from cucumbers to cattle. Increased dealer services and additional processing steps are being performed between the farm and the ultimate consumer.

Because of these changes, as well as changes in methods of distribution, producers have little or no contact with consumers. Nevertheless, the product provided by producers, services contributed by intermediate marketing men, and merchandising methods of food retailers, influence the sales potential of food products.

The potential is greater, of course, when all concerned are aware of, and responsive to, consumers' needs and desires. Cash returns to producers, processors, and distributors are influenced by contributions made at each rung of the marketing ladder.

At retail, many products are subject to a high degree of impulse purchasing. Not only must these products be in a form and of a quality and size acceptable to consumers, but the manner in which they are presented at retail is extremely important.

For impulse items—such as pickles—the effectiveness of in-store merchandising is crucial to sales. About 60 million pounds of pickles and pickle products are to be found in retail store inventories throughout the United States, according to a nationwide inventory survey. Normally, pickles are located in food stores along with condiments and other specialty items such as relishes, olives, catsup, mustard, and pickled foods. Results obtained in 30 supermarkets ranging from Massachusetts to Ohio, reported in this article, include

all the specialties located with pickles. The number and type of such specialties vary from store to store.

Food specialties, including pickles, are considered impulse items, and these were purchased more frequently in stores where customers were exposed to a high percentage of all store displays.

Marketing researchers of USDA's Economic Research Service found that 37 to 71 percent of the shoppers in a store are exposed to the pickle and related specialty items. Figures vary from store to store due to differences in store layout, characteristics of customers, season of the year, and so on. From 2 to 17 percent of all shoppers made a purchase at the pickle and related specialty item section of the store. There was considerable variation in this percentage between stores. Of the shoppers who were exposed to regular shelf displays of specialty items, up to 24 percent purchased either pickles or other related specialty items.

About 1 percent of the store customers handled some item in the "specialty" section, which included pickles, but did not make a purchase. About 1 percent of the total number of grocery department purchases were from the specialty group. The wide range in percent of shoppers exposed to pickle specialty items appears to be influenced by the arrangement of store fixtures. In considering the 37 to 71 percent of customers exposed to specialty items, the percentage was generally higher in stores with continuous grocery gondolas than in stores with short gondolas and cross aisles. This percentage was relatively constant during the entire week in stores with continuous gondolas.

In contrast, the percentage increased up to 14 percentage points from the first to last part of the week in stores with short gondolas, although still generally below exposure in stores with continuous gondolas. The percentage of customers purchasing pickles and related products increased during the latter part of the week in all types of stores. And here again, the level of purchases was greater in stores with continuous gondolas.

Items adjacent to pickles and related specialty items appeared to have a considerable influence on the extent of exposure to store shoppers. The greatest exposure occurred when the specialty items were located near produce or the delicatessen section. Exposure was also relatively high when specialty items were located in areas of normally high traffic, such as a perimeter gondola or cross aisle of the store. In addition to normal in-store merchandising, increased exposure may be encouraged by the use of special promotions such as newspaper, radio, and television advertising, special displays, price reduction, and tie-in display with other commodities, and seasonal sales.

There are many factors affecting the rate of purchase of pickles and related specialty items. Because of the impulse nature of these items, however, it appears that one of the best means for improving retail sales is by increasing customer exposure to them—which also holds true for many other products of a similar nature.

(At the time this article was prepared, both authors were staff members of the Market Development Branch, Economic Research Service. Since then Mr. Smith has left the U.S. Department of Agriculture and is now employed at the Bureau of the Census.)

A Cost-Cutting Technique for Packaging Produce

By PAUL SHAFFER

A SAVING of \$710 a year in packaging costs can be achieved in a \$3,000 a week produce department by the use of new plastic films and a simple wrapping device in place of a standard or manual film wrapping method. Marketing researchers in the USDA's Agricultural Marketing Service estimate that such stores spend about \$2,785 a year to wrap produce, using present methods. But with the type of film and the film wrapper recommended by the AMS marketing researchers, it would cost only about \$2,075 to wrap the same number of packages a year.

Today's market offers several types of plastic shrinkable films for prepackaging produce. These films have exceptional clarity and, because of their shrink characteristics, make a tight and attractive package.

Many stores that are not supplied by warehouse-packaged produce cannot justify the cost of a heat tunnel to shrink these films. As the cost of labor in the retail food store increases, it becomes essential that offsetting economies be instituted.

There are on the market two films which can be used with a simple wrapping device to provide inexpensive use of plastic film in the store, according to AMS marketing researchers.

The films are a 75-gauge non-fogging polyvinyl chloride—a soft film which has a natural shrink (approximately 9%) and which is used to completely overwrap produce in trays. The other film is a polystyrene—a hard film with high shrink characteristics. It is used to sleeve-wrap such produce items as 6-pack apples, oranges, peaches, and pears.

Which film is used depends on whether the package is overwrapped or sleeve-packaged, which, in turn, depends on the particular item. And, to a degree, it depends on the type of display case. Some produce managers believe the air circulation in a mechanically refrigerated case will dry out or dehydrate the produce in a sleeve-wrapped package.

The wrapping device, as pictured, consists of a flat surface on which the package is placed for wrapping; rollers on which one or more rolls of film are placed; a perforator; a "Teflon" covered seal plate, and a hot wire to cut the film to the desired length.

In operation, the unwrapped package is placed on a shelf under which the film passes. The end of the film is grasped and pulled over the package with about 3" tucked under the far side of the package. The package is grasped, at the same time holding onto the end of the film, and carried toward the operator. A complete loop, or band of film, is being placed about the package, and as it moves toward the operator the band or sleeve becomes snug.

The operator then gently releases the package onto the heat plate, simultaneously cutting the film on a hot wire. The film used for sleeve-wrapped packages is about as wide as the package.

If the package is completely overwrapped, a wider film is used. The package is picked up after the first seal, the two unsealed ends are tucked under the package, and it is again "dropped" onto the seal plate for the final seal.

When the package is overwrapped with the polyvinyl chloride film it is wrapped rather tightly, and the natural tendency of the film to shrink tightens the film still more. The amount of tension is controlled by adjusting the machine.

The film is automatically perforated as it is dispensed—the perforations being essential for most produce items to allow them to breathe. The seal plate is set at 210° F., plus or minus 10°, for the polyvinyl chloride film. A 15" roll is used for No. 2 and No. 1-½ trays, and a 12" roll for No. 1 and No. ½ trays.

The polystyrene film used for sleeve-packaging is in an 8" roll and the sealing temperature is 260° F., plus or minus 10°. The sealing procedure is somewhat different for sleeve-wrapped packages. The seal plate seals the film on the underside of the package and, in

(continued on page 16)



In operation, the unwrapped package is put on a shelf. The film passes under shelf.



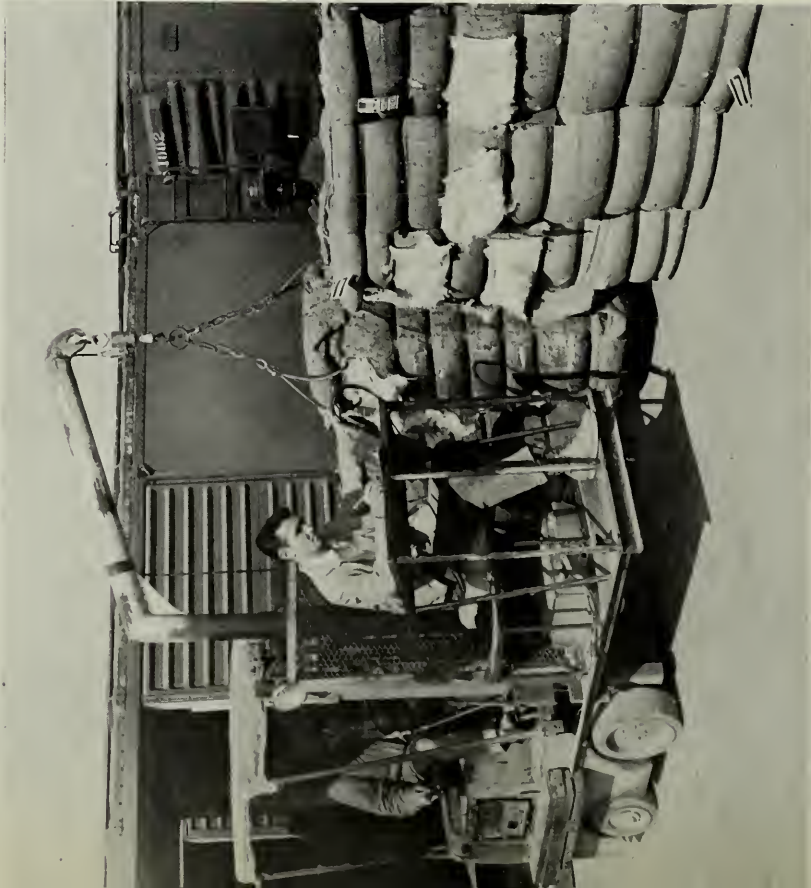
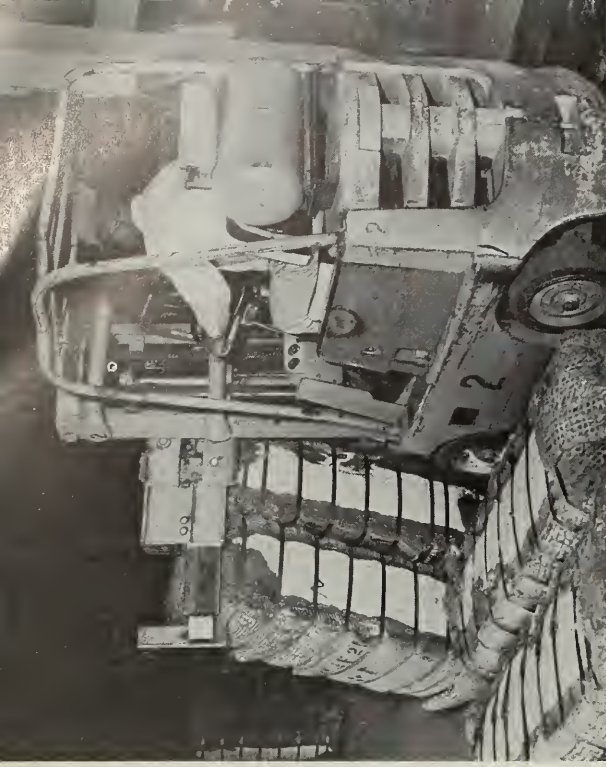
End of film is pulled over package with 3 inches tucked under far side of the package.



Operator releases package onto heat plate, simultaneously cutting film on a hot wire.

Cotton Warehousemen Say, "Goodbye to the Hand Truck"

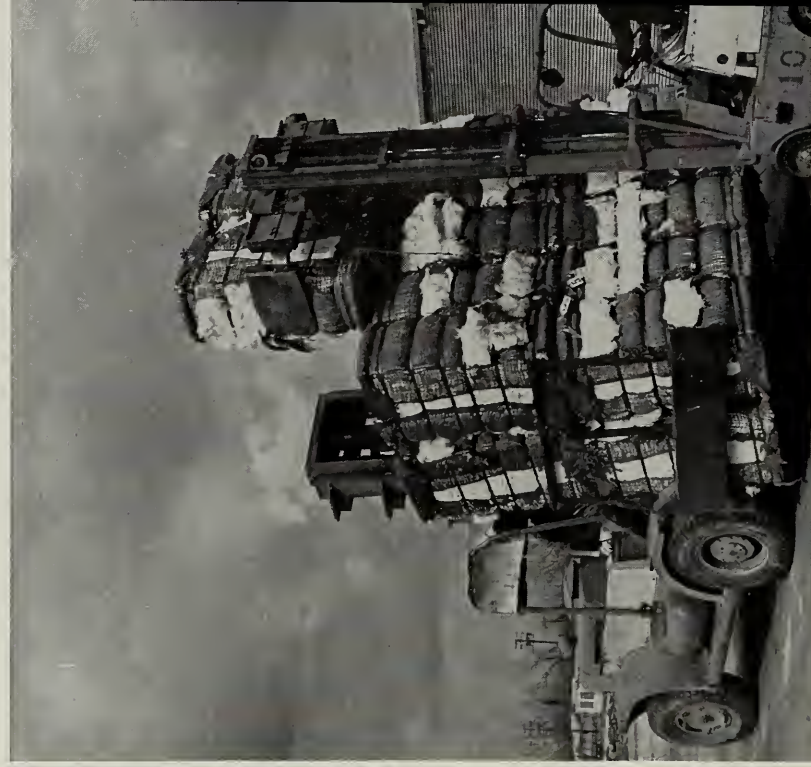
Cotton warehouse operators are cutting costs by using modern handling equipment. These pictures illustrate some handling procedures and equipment recommended by marketing researchers from USDA's Agricultural Marketing Service that spell, at least in part, "Goodbye to the hand truck."



Many warehousemen save money with the electronic scale. It is mobile, fits any clamp truck, does not require highly skilled operators, and is fast.



Note outstanding features of this cotton warehouse designed by marketing researchers from USDA's Agricultural Marketing Service: (1) Compartment is high enough to accommodate the storage of flat bales 3-high, on-head, even at the eaves. (2) Doors are high and wide enough to allow 2-way clamp-truck traffic. (3) Aisles are wide enough for use of labor-saving equipment.



Some cotton warehouse operators use clamp trucks that will handle as many as 20 bales of cotton at one time, cutting costs even further.

A joint Federal-State effort to get marketing information on food supplies to the schools is yielding benefits to farmers and consumers.

Plentiful Foods Used in School Lunch

By KENNETH E. ANDERSON and ROBERT B. REESE

ONE of the ways the U.S. Department of Agriculture assists in expanding markets for foods in plentiful supply is to make timely marketing information available to schools. This is accomplished through coordinated efforts involving USDA's plentiful foods and school lunch programs.

Schools participating in the National School Lunch Program constitute a major outlet for foods. Each year their total purchases of food in local markets amount to \$600 million or more.

In making their food buying decisions, operators of school lunch programs are interested in providing nutritious and appetizing meals at low cost. At the same time, farmers with low-priced commodities have need for an expanded market. The Department is concerned with bringing these buyers and sellers together in the commercial market to their mutual benefit.

As part of its broad marketing program, the USDA regularly gives food trade groups and large scale food users a monthly list of foods in plentiful supply and in need of special merchandising attention. A special version of this list is developed each month for schools which feature those plentiful foods especially adapted for use in school lunch programs. Such advanced information concerning these plentiful foods is forwarded to the School Lunch Directors in the States.

These State agencies disseminate this information in newsletters or special releases to participating schools through-

out the State. As a result of this cooperative Federal-State effort, most schools have information nearly three weeks in advance of the month in which the foods will be in plentiful supply in time to use in menu planning.

During 1960, a sample survey of the 17,400 midwestern public and private schools participating in the National School Lunch Program was undertaken to determine the effectiveness of this market information effort. Reports from 1,457 schools indicate that plentiful foods information was being well disseminated among the schools and that large numbers of schools were buying the foods listed. During the survey month, plentiful foods accounted for 22 cents of each dollar that these schools spent for food.

School lunch plentifuls featured for the survey month included cabbage, fresh eggs, carrots, canned freestone peaches, and celery. Other plentifuls listed included oranges, onions, sweet-potatoes, cranberries, pork, broilers and fryers, grapefruit, raisins, lard, peanuts and peanut products, and pea beans.

WITH few exceptions, officials in program schools were aware of receiving plentiful foods information (over 95 percent of schools with 97 percent of enrollment). In most of these schools (over 70 percent), the newsletters and reports from State School Lunch Directors were the only source of information on plentiful foods.

Information was reaching a majority

of schools at least 20 days in advance of the month during which foods were to be in plentiful supply. For most schools information was received in time for use in menu planning. The importance of timing was stressed by the finding which showed that officials in only 1 out of 10 schools indicated that they would be willing to change a preplanned menu to include more of the foods in abundance.

MENU and recipe suggestions were found useful in 9 out of 10 schools receiving plentiful foods information. Suggestions of greatest use were those for preparing and serving plentiful foods not commonly a part of the regular school lunch fare. Since school lunch service may have an important future carry-over effect to the home, these suggestions may have marketing implications beyond the school lunchroom.

During the survey month plentiful foods constituted an important segment of total food purchases by midwestern schools under the National School Lunch Program (over 22 percent). Of primary importance, however, was the wide range in usage of plentiful foods among various categories of schools—from under 20 percent to more than 40 percent of total food purchases. Purchases of plentiful foods followed definite patterns, by size of school, age of pupils, and neighborhood income level.

Schools with less than 250 pupils spent 36 percent of their food dollar for plentiful foods; whereas, schools with more than 500 pupils used about 18 percent of their food budget.

Programs

In elementary schools, thirty cents of the food dollar went for plentifuls. In contrast, less than 20 cents of each dollar spent for food by junior and senior high schools and combination schools was for food in plentiful supply.

Even greater variations were found by neighborhood. Schools where the average family income level was less than \$3,000 used 44 percent of the food dollar in purchasing items in plentiful supply. In highest income areas, school purchases of plentiful foods dropped to 16 percent.

To a lesser degree, use of plentiful foods increased with higher levels of pupil participation in the National School Lunch Program. Schools having half or more of their pupils eating noon-day lunches spent more of their food dollar for plentifuls than schools having lower participation rates.

THESE findings show that the joint Federal-State effort to get this marketing information to the schools is yielding benefits to both the farmer and the consumer. The findings indicated also that these benefits can be obtained only when advanced information is sent to the schools in time to meet their regular menu planning schedule. As a result, continuing emphasis should be placed upon speed in dissemination of this information.

(Mr. Reese is a staff member of the Market Development Branch, ERS. When the study was made, Mr. Anderson was also a member of that staff but has since transferred to the Bureau of the Census.)



Plentiful Foods

MONTHLY LIST FOR THE FOOD SERVICE INDUSTRY • A BUYING GUIDE FOR PUBLIC AND INSTITUTIONAL FEEDERS

DECEMBER 1962

Features
TURKEYS
BROILER-FRYERS
CRANBERRIES

Other Plentifuls
ORANGES
RED TART CHERRIES
MAINE SARDINES

with the menu of the month

PF 277 ISSUED NOVEMBER 1962
 UNITED STATES DEPARTMENT OF AGRICULTURE • AGRICULTURAL MARKETING SERVICE • FOOD DISTRIBUTION DIVISION • WASHINGTON 25, D. C.



NEW PACKAGING METHODS

Increase Peach Sales in Retail Food Stores

PEACH growers, packers, and retailers who are thinking ahead toward the 1963 season may want to consider using a "family" of new packages which resulted in increased sales, according to tests by marketing researchers in the USDA's Agricultural Marketing Service, Clemson College, and Cornell University.

Peach sales rose by leaps and bounds in stores where the new packaging methods were tested. By the end of the season a cooperating shipper found it difficult to keep pace with the demand for peaches in the new containers.

The impact on sales of the new packages was further dramatized when bulk and prepackaged peaches were displayed so as not to compete with each other. The prepackaged outsold the bulk peaches by 55 to 66 percent, even though the bulk displays contained many larger peaches.

Higher sales also resulted when the new packages were used in combination with the conventional bulk display, in later tests. Total sales from the combined display were 30 to 62 percent higher than the sales level of a conventional bulk display alone. These sales records were at least partially a result of giving the consumer a choice of size of peach and type of container.

A "family" of three types of containers was used for the peaches. The smaller peaches (2 to 2¼ inches) were prepacked and shipped in consumer-size units holding 4 pounds. Larger peaches were shipped in a fiberboard box hold-

ing 20 pounds of fruit in two cell-trays. Peaches in a range of sizes were marketed in conventional ¾-bushel baskets.

The consumer-size units were made of attractive green molded pulpboard, and overwrapped with shrinkable plastic film to hold the fruit firmly in place. Wholesalers and retailers particularly liked the 4-pound package, commenting favorably on its ease of display, eye-appeal, salability, protection to fruit, and handling convenience.

PEACHES marketed in the new packages were a good buy for consumers, as indicated by samples examined by marketing researchers. They found only 3 percent of the tender fruit was bruised when packaged in the 4-pound units. And only 7 percent—still not serious—was bruised when packaged in 20-pound units. But bruising found in terminal markets was 13 percent among peaches in bulk baskets.

Consumers may also find fewer hard under-ripe peaches—a major complaint—when the new packaging methods gain wider use, since fruit can be harvested and shipped at a riper, tastier stage in the new packs.

The new packs brought a better price than peaches marketed in ¾-bushel baskets, too. In commercial transactions noted in a large number of retail stores in Eastern and Midwestern cities, mixed sizes of peaches in the baskets sold for an average of 10 cents a pound—small uniformly sized peaches in the 4-pound

consumer packages brought 14 cents—and larger peaches in the 20-pound tray-packs sold at 17 cents a pound.

Transportation, labor, and materials costs for the 20-pound units were only 37 cents higher than for the bulk baskets, per hundred pounds of peaches. Costs for the same items were about a dollar higher for the consumer units than bulk baskets, per hundred pounds. Although there are some other costs for the new packs, net returns would still be higher with the new method than with the traditional bulk baskets.

The AMS tests were made in South Carolina, where the peaches were grown and packaged, and in major Eastern and Midwestern markets, where the peaches were sold.

The tests were conducted at the packing shed, in transit, and at wholesale levels by AMS marketing researchers; tests at the retail level were conducted by Clemson College and Cornell University.

Details are given in Marketing Research Report No. 533, "Evaluation of Selected Consumer Packages and Shipping Containers for Peaches." Single free copies are available from Office of Information, USDA, Washington 25, D.C.

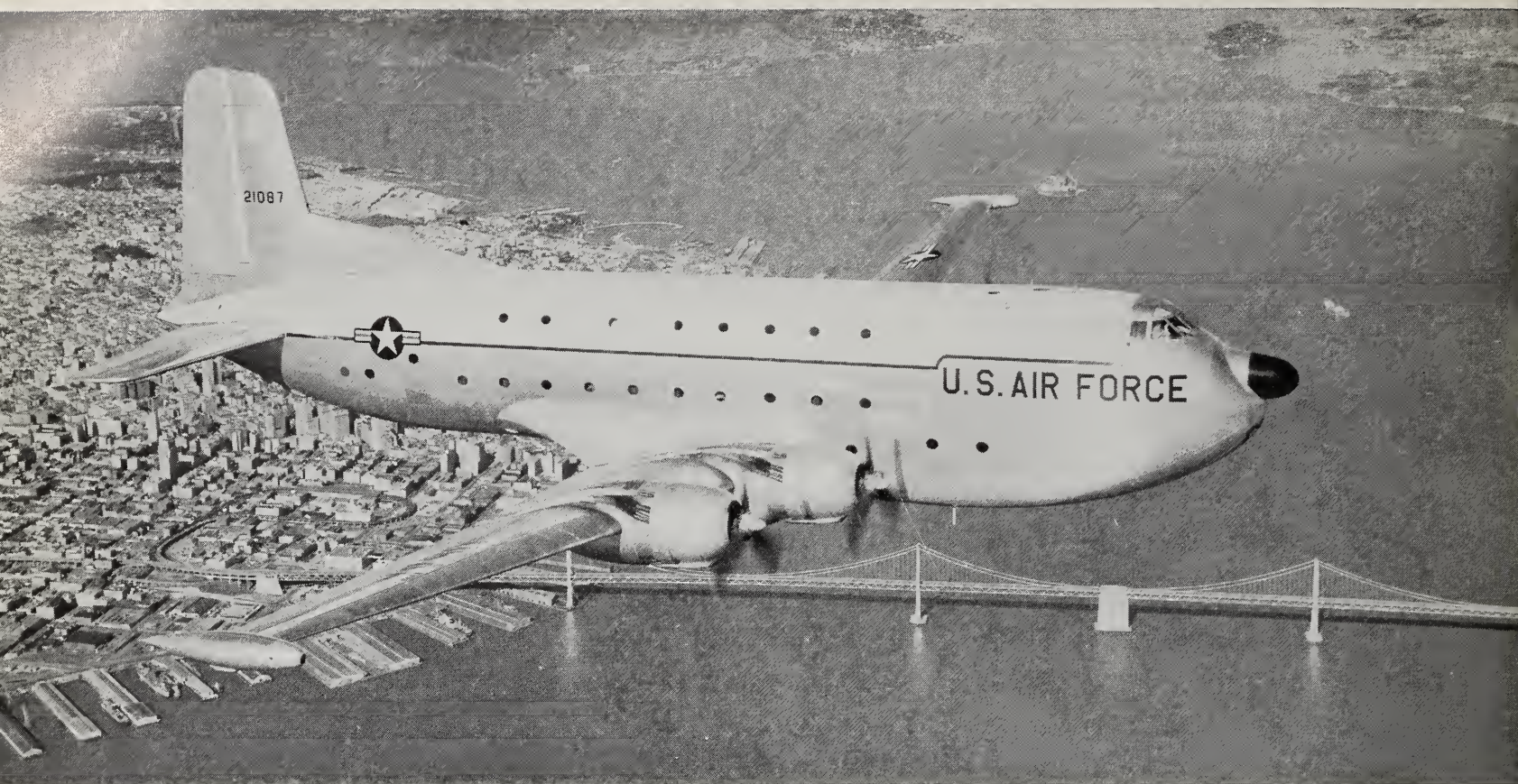
A related study appears in Circular 132, "Consumer Acceptance of Packaged South Carolina Peaches in Selected Supermarkets," available from Publications Department, South Carolina Experiment Station, Clemson, South Carolina.



One side of this master container has been cut to reveal four of the eight film-wrapped tills of peaches packed in it. The upper packages are supported by a pad separator which also serves to isolate the peaches on the left from the peaches on the right in the bottom layer.



Worker removes tills of peaches from conveyor and feeds them into machine which applies sleeve wrap of transparent film.



USDA-DONATED FOODS AIRLIFTED TO TYPHOON VICTIMS IN GUAM

ON November 11 and 12, typhoon Karen howled through Guam, whirling aside everything in her path.

After she had rushed away, the Governor of the island reported that the storm had caused over \$100 million worth of damage. Forty-five thousand of the 66,900 people living on the island were homeless, many had been hurt and six killed.

Of those whose homes had been destroyed, some 10,000 needed food help.

USDA's Agricultural Marketing Service was prepared to meet the emergency through its direct distribution program. USDA-donated food is channeled in a "pipeline" from processors and packagers to the States. The States send it to area supply centers and from there it arrives in the local areas for

normal distribution to needy families, institutions and schools. In an emergency, this distribution system serves as a ready source of food to help disaster victims.

Local officials in Guam found that enough of Guam's stock of direct distribution food was still intact to last through November.

By the fourth week in November 158,870 pounds of food had been airlifted from Travis Air Force Base, California, to Guam. These foods replaced stocks destroyed by the typhoon and replenished stocks being used for emergency feeding. At about the same time 175,240 pounds were shipped by sea from San Francisco to arrive in Guam on December 11.

Foods sent to Guam included dry

milk, rolled wheat, flour, rice, peanut butter, canned chopped meat, cheese, butter, shortening, and dry beans.

Another ocean shipment, largely USDA rice and milk for the Trust Territories of the Pacific, left San Francisco December 4 to supply the needy family distribution program, which increased from 750 to 2,500 in the Truk District as a result of the same typhoon.

All the foods drawn from California's distribution channels have been replaced to the California Department of Education which handles distribution under agreement with USDA.

The distribution "pipeline" of donated foods is always ready to be re-routed for feeding the people victimized by natural disasters.



This is the San Leandro, Calif., warehouse from which USDA's Food Distribution Division officials drew the donated foods for airlift and ocean shipment to Guam. USDA-donated foods from this warehouse are normally distributed to school lunch programs, needy families, and institutions. Below, trailer trucks with 45 tons of USDA-donated rice arrive at Travis Air Force Base cargo terminal for airlifting to Guam. Loads of these foods are checked and tied down by military personnel.



Designing a Warehouse for Storing Cotton Bales

COTTON warehousemen who plan to add or expand facilities for storing cotton bales, should first decide whether they will compress the bales on receipt at the warehouse, or wait until they receive a shipping order.

Marketing researchers have discovered that warehousemen can save about 25 percent of labor and equipment costs if they wait to compress bales on receipt of the shipping order. However, less warehouse and floor space is required if bales are compressed as they are received, and then stored. The cost of additional floor space needed for storing flat bales often offsets the savings in labor and equipment costs when bales are compressed upon receipt of a shipping order.

Warehousemen should consider these factors when deciding which method to use: (1) Size of storage compartment; (2) estimated number of bales to be received during the harvest season; (3) length of the harvesting season; (4) estimated number of bales to be shipped as standard or high-density bales; (5) handling operations; and (6) labor and equipment requirements and costs.

Some of these factors will vary from season to season, and a warehouseman may vary his compressing methods from year to year. Usually, however, a certain pattern will prevail over the years for a particular area.

Whichever method the warehouseman should decide to use, he will find helpful information available in one of two reports from USDA's Agricultural Marketing Service. The first report, "Designing a Public Warehouse for Storing Flat Bales of Cotton," (MRR-355) was issued in October 1959, and presents plans for four different types of storage compartments for flat bales.

The other report, "Designing a Public Warehouse for Compressing and Storing Bales of Cotton," (MRR-548) was recently issued by USDA's Marketing researchers. This report contains

designs and costs for three different types of compresses and warehouses with connected compartments for storing 40,000 to 50,000 compressed bales. Also in the report is a modification to include a compress in a warehouse with separated compartments for storing flat bales.

One warehouse has seven connected compartments of pole-type construction with corrugated metal siding and roofing. The estimated construction cost of this warehouse in 1960 was \$770,000. The total annual facility cost, which includes depreciation, interest, taxes, insurance and maintenance, would be about \$72,000, or \$1.57 per bale of capacity.

Another warehouse is of pre-fabricated steel construction with seven connected compartments in a row, each separated by a firewall. Estimated construction cost in 1960 was \$1,076,000. Annual facility cost would be approximately \$84,000, or about \$1.87 per bale of capacity.

The third warehouse is of all concrete construction consisting of two rows of interconnected compartments. One row has three compartments, the other has four. Estimated cost in 1960 was \$1,300,000 with an annual facility cost of approximately \$80,000, or \$1.77 per bale of capacity.

Another warehouse facility is of pole-type construction consisting of six separated compartments. This is a warehouse for storing flat bales, modified to include a compress compartment.

The plans in this report are for cotton compresses and warehouses suitable for construction in the mid-South, Gulf Coast, and other areas having high or medium rainfall. These designs have connected storage compartments, covered loading and unloading areas, more extensive gutters, downspouts, and other drainage facilities. In drier regions the covered areas and extensive drainage facilities are not needed.

Storage compartments for storing compressed bales are smaller in size than those for storing flat bales. But the same factors are used in developing a layout. Labor force, bales, and equipment must be designed so as to move bales as easily as possible over the shortest distance.

More detailed information about designing public warehouses for storing bales of cotton can be found in either Marketing Research Report 355 or 548. Copies may be obtained by writing to the Office of Information, USDA, Washington 25, D.C.

PACKAGING PRODUCE

(continued from page 7)

addition, will partially shrink the film if the package momentarily remains on the plate. The result is a tight, exceptionally clear package, with no wrinkled corners—but, just as important, it has a low labor and materials coast.

Assuming the average prepack produce department has a volume of \$3,000 per week, and packages 350 trays per \$1,000 sales, its weekly production of trayed produce would be 1,050 packages. A saving of 1.3¢ per package represents \$710 per year.

The wrapping device costs less than \$100, so the investment in equipment can be paid in two months. It can be incorporated in a regular produce packaging station, provided the added 5" height of the device doesn't make the working surface too high; the working surface should be between 38 inches and 40 inches. If additional shrink is desired for the sleeve-wrapped package, the flow of air from an inexpensive hot air dryer can be directed onto the surface of the package.

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